

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference S04P1133W000	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/011925	International filing date (<i>day/month/year</i>) 19.08.2004	Priority date (<i>day/month/year</i>) 21.08.2003
International Patent Classification (IPC) or national classification and IPC H04B7/10, H01Q3/24, H01Q3/44		
Applicant SONY CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 4 sheets, as follows: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- This report is based on translations from the original language into the following which is the language of a translation furnished for the purposes of:
- international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- the international application as originally filed/furnished
- the description:
pages 1-12 as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- the claims:
nos. _____ as originally filed/furnished
nos.* 1-6 as amended (together with any statement) under Article 19
nos.* _____ received by this Authority on _____
nos.* _____ received by this Authority on _____
- the drawings:
sheets Fig. 1-6 as originally filed/furnished
sheets* _____ received by this Authority on _____
sheets* _____ received by this Authority on _____
- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:
- the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)	Claims <u>1-6</u>	YES
	Claims _____	NO
Inventive step (IS)	Claims _____	YES
	Claims <u>1-6</u>	NO
Industrial applicability (IA)	Claims <u>1-6</u>	YES
	Claims _____	NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 08-107379 A (Hitachi, Ltd.), 23 April 1996, entire text; all drawings (Family: none)

Document 2: JP 53-112645 A (Tokyo Shibaura Electric Co., Ltd.), 2 October 1978, entire text; all drawings (Family: none)

Claims 1 and 4

Document 1 indicates that two reception signals selected from reception signals received from a plurality of antennae are synthesized, and that directivity is controlled. In addition, paragraphs [0014] and [0015] indicate that the minimum number of antennae is two, and that as the reception signals from each antenna are synthesized, an array which allows different directivity is sufficient. Therefore, setting the number of antenna of the receiver set forth in document 1 to two, and positioning the antennae at an interval shorter than the half-wavelength of the frequency, would merely be matters which a person skilled in the art could design as necessary.

Therefore the path from the "input terminal (701)" to the "adding circuit (706)" disclosed in document 1

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corresponds to the "first transmission path" of the invention of this application.

In addition, the path extending from the "input terminal (702)" via the "phase shifter" to the "adding circuit (706)" set forth in document 1 corresponds to the "second transmission path having a delay circuit with a predetermined electrical length" of the invention of this application.

Moreover, the "antenna switching circuits (5, 6)" set forth in document 1 correspond to the "switching means" of the invention of this application.

Moreover, as disclosed in document 2, for example, it is common practice to switch receiving directivity to the reverse direction, therefore it would not be particularly difficult for a person skilled in the art to constitute a feature wherein directivity is switched to the reverse direction, in the receiver set forth in document 1.

Therefore the inventions set forth in claims 1 and 4 do not involve an inventive step in the light of documents 1 and 2 cited in the international search report.

[Claims 2 and 5]

In the receiver set forth in document 1 (fig. 1), determining whether to position the "phase shifter (711)" on the path from the "input terminal (701)" to the "adding circuit (706)" or on the path from the "input terminal (702)" to the "adding circuit (706)", is merely a matter which a person skilled in the art could select as necessary.

Therefore the path extending from the "input

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terminal (701)" via the "phase shifter (711)" to the "adding circuit (706)" set forth in document 1 corresponds to the "first transmission path having a delay circuit with a first electrical length".

In addition, the path from the "input terminal (702)" to the "adding circuit (706)" set forth in document 1 corresponds to the "second transmission path" set forth in the invention of this application.

In addition, the path extending from the "input terminal (702)" via the "phase shifter (712)" to the "adding circuit (706)" set forth in document 1 corresponds to the "third transmission path having a delay circuit with a second electrical length".

Moreover, the "antenna switching circuit (6)" and "switching circuit (715)" set forth in document 1 correspond to the "first switching means" and "second switching means" of the invention of this application respectively.

Therefore the inventions set forth in claims 2 and 5 of this application are merely constituted by having the antenna elements which is connected to the "antenna switching circuit (5)" of the receiver set forth in document 1 constituted as a fixed element, and applying the technique of switching reception directivity to the opposite direction, as set forth in document 2, for example.

Therefore the inventions set forth in claims 2 and 5 do not involve an inventive step in the light of documents 1 and 2 cited in the international search report.

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Claims 3 and 6

Document 1 (paragraphs [0014] and [0015]) indicates that the number of antennae should be two or more, and that as the reception signals from the antennae are synthesized, the antennae should be positioned to have different directivities, therefore in the receiver set forth in document 1, setting the number of antennae to three, and positioning the antennae at a shorter interval than the half wavelength of the frequency, are matters which a person skilled in the art could design as necessary.

Therefore the path extending from the "input terminal (702)" via the "phase shifter" to the "adding circuit (706)" set forth in document 1 corresponds to the "first transmission path having a delay circuit with a predetermined electrical length" set forth in the invention of this application.

In addition, the path from the "input terminal (701)" to the "adding circuit (706)" set forth in document 1 corresponds to the "second transmission path" of the invention set forth in this application.

In addition, the "antenna switching circuit (5)" set forth in document 1 corresponds to the "switching means" of the invention set forth in this application.

Therefore the inventions set forth in claims 3 and 6 of this application are merely constituted by fixing the antenna element which is connected to the "antenna switching circuit (6)" of the receiver set forth in document 1 to the central antenna of three antenna elements, and applying the technique of switching reception directivity to the opposite direction, as set forth in document 2, for example.

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Therefore the inventions set forth in claims 3 and 6 do not involve an inventive step in the light of documents 1 and 2 cited in the international search report.